

**SD61H-1**  
Rev 7  
February 2008  
Supersedes Rev 6

## **Model 61H F/R Booster Relay**

### **INTRODUCTION**

Designed to meet high-speed control applications, the Model 61H F/R Booster Relay produces a high volume boosting action. Its primary purpose is for use with valve positioners, although it can be used by itself for the high volume of air it can control. (This relay is not normally used in measuring circuits.)

The relay contains an integral stabilizing bypass valve, eliminating the need for an externally piped bypass. The bypass opening is controlled by a screwdriver adjustment in the body of the relay which permits tuning for optimal dynamic response. Opening this valve improves the stability of the positioner/relay/actuator circuit.



This instruction has five major sections: Introduction, Installation, Maintenance, Warranty, and Parts List.

### **Specifications**

Supply Pressure .....	100 psig max.
Input Pressure .....	100 psig max.
Accuracy of 1:1 Ratio .....	5% (based on 3-15 psi input)
Reproducibility .....	0.1% (based on 3-15 psi input)
Linearity .....	0.4% (based on 3-15 psi input)
Maximum Flow Coefficient [C <sub>v</sub> ] .....	0.9 Supply; 1.1 Exhaust
Ambient Temperature Limits .....	-40° to +180°F (-40° to +82.2°C)

### **INSTALLATION**

#### **Shipping and Storage**

If the relay is to be stocked, stored, or shipped to another location prior to piping, make sure that the factory installed plastic plugs are in the ports to prevent entry of moisture, dirt, or other contaminants.

#### **Mounting**

Refer to Relay Installation Drawing 10342-78 for mounting dimensions, the location of input, output, and supply ports, and a schematic diagram of the relay. Relay input is often connected to the output of a positioner. Connections are 1/4" NPT. Mount the relay in a reasonably vibration free location.

Operating temperature limits are listed in the Specifications section of this Instruction. The temperature in the selected location must not exceed the specified operating temperatures.

#### **CAUTION**

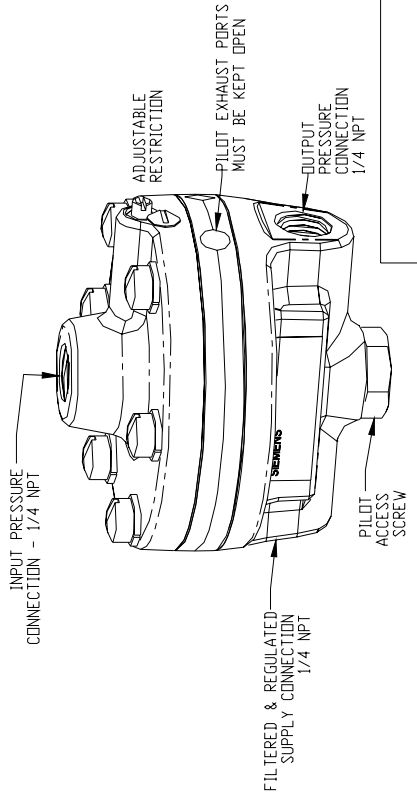
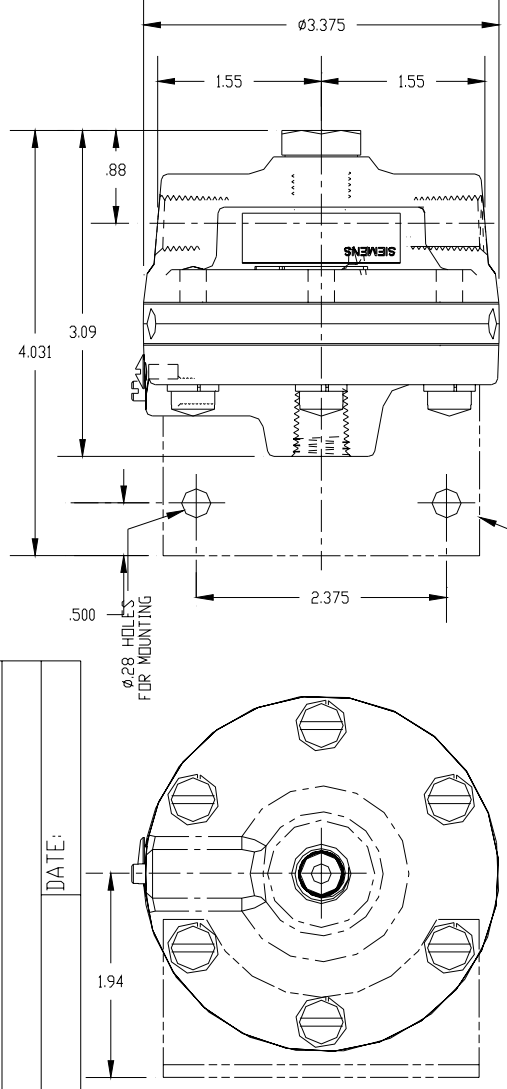
Exceeding the specified ambient temperature limits can adversely affect performance and may cause damage to the relay.

THIS PRINT CERTIFIED CORRECT

FOR: \_\_\_\_\_

P.O. \_\_\_\_\_

BY: \_\_\_\_\_ DATE: \_\_\_\_\_



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ALL DIMENSIONS ARE IN INCHES UNLESS SPECIFIED

Siemens Energy & Automation, Inc.  
Spring House, PA 19477 USA

INST DWG.61H		STANDARD TOLERANCES: DECIMALS .XXX ±.005 ANGLES ±2 DEG.	
MFG	DATE	CONFIDENTIAL INFORMATION	
ENG	DATE	of Siemens Energy & Automation	
MKTG	DATE	SCALE	DRAWING NO.
DRAWN, VDB	DATE 4/17/06	3/4-X	10342-78

Blow out all piping before connections are made to prevent the possibility of dirt or chips entering the relay. Use pipe sealant sparingly, and then only on the male threads. A non-hardening sealant is strongly recommended. Connect the relay to a source of clean, dry, oil-free instrument air. See Instrument Air Requirements below.

#### CAUTION

Pressure in excess of 100 psi to any connection may cause damage to the relay. In any event, maximum actuator pressure should never be exceeded.

### Instrument Air Requirements

Connect the relay to a source of clean, dry, oil-free instrument air. Failure to do so will increase the possibility of a malfunction or a deviation from specified performance.

#### CAUTION



Use of process fluids other than instrument air is not recommended. No claim is made as to the suitability of this product for use with other process fluids, such as hazardous gases, except as listed on the appropriate certificate. Non-approved instruments are suitable for use with instrument air only. Optional features and modifications such as tapped exhaust do not imply suitability for use with hazardous gases except as listed on the approval certificate.

#### CAUTION

Synthetic compressor lubricants in the air system at the instrument may cause the instrument to fail.

There are many types of synthetic compressor lubricants. Some may not be compatible with materials used in construction of the relay. Wetting of these materials with such an oil mist or oil vapor, etc., may cause them to deteriorate and may ultimately result in the failure of the instrument. The following materials are in contact with the supply air: aluminum, brass, neoprene, buna-N and stainless steel.

The requirements for a quality air supply can be found in the Instrument Society of America's "Quality Standard for Instrument Air" (ISA-S7.3). Basically this standard calls for the following:

Particle Size – The particle size in the air stream at the instrument shall be no larger than 3 microns.

Dew Point – The dew point, at line pressure, should be at least 10°C (18°F) below the minimum temperature to which any part of the instrument air system is exposed at any season of the year. Under no circumstances should the dew point, at line pressure, exceed 2°C (35.6°F).

Oil Content – The maximum total oil or hydrocarbon content, exclusive of non-condensable, should not exceed 1 ppm under normal operating conditions.

### MAINTENANCE

No lubrication of any sort is needed. The Parts List has spare and replacement part numbers.

#### CAUTION



Before disassembling the instrument, remove air pressure to the instrument.

When disassembling the instrument, make sure all parts are clean and free of dirt and debris. Reassembly is the reverse order of disassembly. Make sure not to damage the O-ring(s) and diaphragm(s) when reassembling the instrument.

## Parts Replacement

Refer to the Parts List at the back of this instruction when performing maintenance on the relay. It provides a list of replacement parts and a cut-away view of the instrument.

## CUSTOMER/PRODUCT SUPPORT

This section provides the Internet site addresses, e-mail addresses, telephone numbers, and related information for customers to access Siemens product support.

When contacting Siemens for support:

- Please have complete product information at hand:
  - For hardware, this information is provided on the product nameplate (part number or model number, serial number, and/or version).
  - For most software, this information is given in the Help > About screen.
- If there is a problem with product operation:
  - Is the problem intermittent or repeatable? What symptoms have been observed?
  - What steps, configuration changes, loop modifications, etc. were performed before the problem occurred?
  - What status messages, error messages, or LED indications are displayed?
  - What troubleshooting steps have been performed?
  - Is the installation environment (e.g. temperature, humidity) within the product's specified operating parameters? For software, does the PC meet or exceed the minimum requirements (e.g. processor, memory, operating system)?
- A copy of the product Service Instruction, User's Manual, or other technical literature should be at hand. The Siemens public Internet site (see the table) has current revisions of technical literature, in Portable Document Format, for downloading.
- To send an instrument to Siemens for repair, request a Return Material Authorization (RMA).



### IMPORTANT

An instrument must be thoroughly cleaned (decontaminated) to remove any process materials, hazardous materials, or blood born pathogens prior to return for repair. Read and complete the Siemens RMA form(s).

For customer/product support, visit the Siemens Process Instrumentation product support page at <http://www2.sea.siemens.com/Products/Process-Instrumentation/Support/Customer-Support.htm>. Select the desired type of support (e.g. application, product selection, sales, technical – see below).

Technical Support	
Telephone	1 800 333 7421
E-mail	<a href="mailto:techsupport.sea@siemens.com">techsupport.sea@siemens.com</a>
Hours of Operation	8 a.m. to 4:45 p.m. eastern time, Monday through Friday (except holidays)
Technical Publications in PDF	<a href="http://www2.sea.siemens.com/Products/Process-Instrumentation/Support/PI-User-Manuals.htm">http://www2.sea.siemens.com/Products/Process-Instrumentation/Support/PI-User-Manuals.htm</a> then click the product line (e.g. Control Solutions)
Public Internet Site	<a href="http://www2.sea.siemens.com/Products/Process-Instrumentation">http://www2.sea.siemens.com/Products/Process-Instrumentation</a>
Repair Service	1 215 646 7400 extension 3187

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## WARRANTY

(a) Seller warrants that on the date of shipment the goods are of the kind and quality described herein and are free of non-conformities in workmanship and material. This warranty does not apply to goods delivered by Seller but manufactured by others.

(b) Buyer's exclusive remedy for a nonconformity in any item of the goods shall be the repair or the replacement (at Seller's option) of the item and any affected part of the goods. Seller's obligation to repair or replace shall be in effect for a period of one (1) year from initial operation of the goods but not more than eighteen (18) months from Seller's shipment of the goods, provided Buyer has sent written notice within that period of time to Seller that the goods do not conform to the above warranty. Repaired and replacement parts shall be warranted for the remainder of the original period of notification set forth above, but in no event less than 12 months from repair or replacement. At its expense, Buyer shall remove and ship to Seller any such nonconforming items and shall reinstall the repaired or replaced parts. Buyer shall grant Seller access to the goods at all reasonable times in order for Seller to determine any nonconformity in the goods. Seller shall have the right of disposal of items replaced by it. If Seller is unable or unwilling to repair or replace, or if repair or replacement does not remedy the nonconformity, Seller and Buyer shall negotiate an equitable adjustment in the contract price, which may include a full refund of the contract price for the nonconforming goods.

(c) SELLER HEREBY DISCLAIMS ALL OTHER WARRANTIES, EXPRESS OR IMPLIED, EXCEPT THAT OF TITLE. SPECIFICALLY, IT DISCLAIMS THE IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, COURSE OF DEALING AND USAGE OF TRADE.

(d) Buyer and successors of Buyer are limited to the remedies specified in this article and shall have no others for a nonconformity in the goods. Buyer agrees that these remedies provide Buyer and its successors with a minimum adequate remedy and are their exclusive remedies, whether Buyer's or its successors' remedies are based on contract, warranty, tort (including negligence), strict liability, indemnity, or any other legal theory, and whether arising out of warranties, representations, instructions, installations, or non-conformities from any cause.

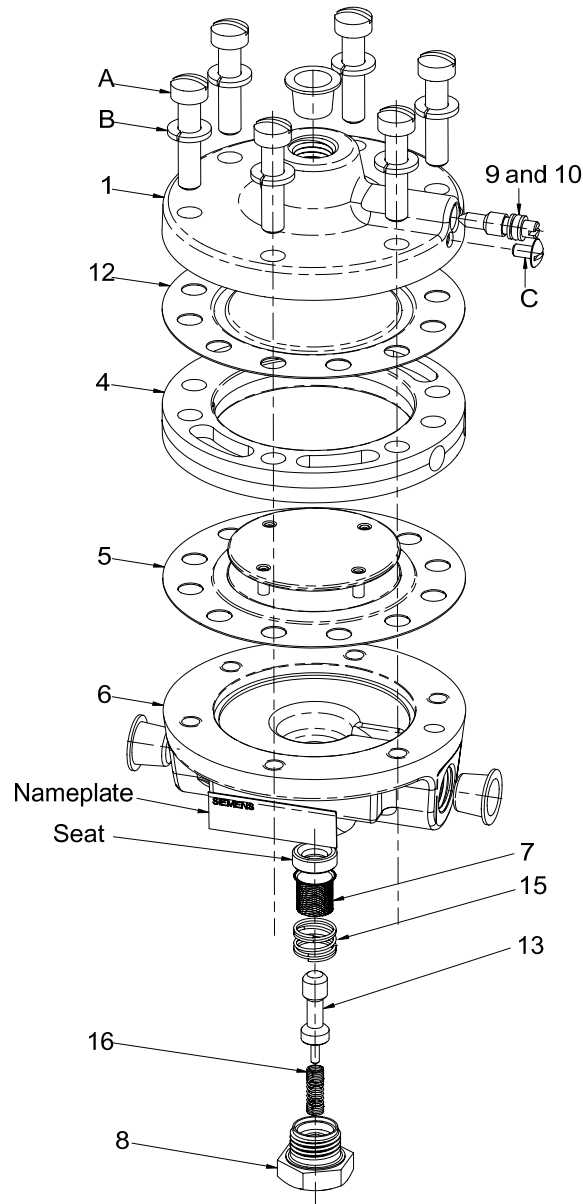
(e) Note: The above does not apply to any software which may be furnished by Seller. In such cases, the attached Software License Addendum applies.

For warranty and non-warranty service, refer to Customer/Product Support in this publication.

**PARTS LIST****Siemens Model 61H F/R Booster Relay**

Drawing 10342PL

Rev 2/08 Supersedes 10/88



Item	Part No.	Description	Req'd
1	10342-148	Top Housing	1
4	8377-76	Exhaust Ring	1
5*	10342-85	Diaphragm Assembly	1
6	10342-147	Bottom Housing	1
7	10342-27	Pilot Screen	1
8	10342-25	Retaining Screw	1
9*	2938-21	O-ring	1
10*	10342-11	Restriction Screw	1
12*	10342-88	Diaphragm	1
13*	TGX:8377-80	Plunger	1
15	10342-26	Compression Spring	1
16	TGX:2881-114	Plunger Spring	1
17	1145-19	Mounting Bracket, Optional – Not Shown	----
A	1-3448	1/4-20 x 1-1/8 Lg. Fill. Hd. Screw	6
B	1-7303	1/4 Lockwasher	6
C	1-1192	6-32 x 1/4 Lg. Truss Hd. Screw	1
D	1-3465	1/4-20 x 1-1/4 Lg. Fill. Hd. Screw, For Mounting Bracket - Not Shown	----

\* Recommended on-hand spare parts. Always specify range, serial number, and other nameplate information when ordering.

**IMPORTANT**

Service Parts Kits are available for servicing the instrument. Contact Siemens for available kits; refer to the Customer/Product Support section of this instruction. Some parts in this Parts List may not be available for separate purchase.